

BUTTERFLIES ON MADEIRA IN APRIL 1985

By D. F. OWEN,* T. G. SHREEVE and A. G. SMITH

The butterfly fauna of Madeira is remarkable in several ways. There are only 14 species but of these one, *Pararge xiphia*, is endemic and three, *Gonepteryx cleopatra*, *Pieris brassicae* and *Hyparchia aristaeus*, have evolved endemic subspecies. Three species, *Danaus plexippus*, *Artogeia rapae* and *Pararge aegeria*, have colonised the island in relatively recent times; the most recent, *P. aegeria*, was first seen in 1976 (Higgins 1977), making Madeira the only place in the world with two sympatric species of speckled woods. There are also two sympatric red admirals, *Vanessa atalanta* and *V. indica*, both of which occur on the Canary Islands. Several vagrants have been recorded including *Hypolimnas misippus* (from tropical Africa), *Colias hyale* and *Issoria lathonia* (both presumably from the Mediterranean region), the latter once a common resident (Baker 1891), but not seen in recent years (Lace and Jones 1984). Gardner and Classey (1960) provide a comprehensive list of the literature on Madeiran insect life; the most up-to-date accounts of Madeiran butterflies are Swash and Askew (1982) and Lace and Jones (1984).

We visited Madeira between 9 and 15 April 1985 with the intention of examining the spread of *P. aegeria* and its possible impact on the endemic *P. xiphia*; the results of our investigations on these two species will be published separately. We recorded ten of the 14 Madeiran butterflies. The two graylings not recorded occur later in the season, while *G. cleopatra* and *P. brassicae* were expected but not seen, possibly because of the time of year, or possibly because both species are less common than they used to be as a consequence of a decrease in the amount of laurel forest (their natural habitat on Madeira) and an increase in cultivation and forestry operations that make use of non-native species of trees. During the week we explored all the major habitats on the island. Cloud, rain and cold severely restricted the activities of butterflies at higher elevations, particularly in the laurel forest, where conditions were rarely suitable for butterflies to fly. The following species were recorded:

Artogeia rapae (small white). Widespread but by no means common in waste areas and among cultivation, especially around Funchal, but also recorded at Faial on the north coast and at Canical in the east. This species first appeared on Madeira in 1971 (Swash and Askew 1982), and there was a mass invasion, presumed to be from Portugal, in 1974 (Wolff 1975). We found a mated pair east of Canical on 14 April but no other evidence of breeding: a quick search of cultivated cabbages revealed neither larvae nor damage by larvae.

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Colias croceus (clouded yellow). Common in open areas at most elevations but especially near sea level on the tree-less Ponta de São Lourenço where on 14 April dozens of females were egg-laying on clovers and vetches. Two individuals of the female form *helice* were positively identified and there may have been others.

Lycaena phlaeas (small copper). A female at Eira de Fora on 14 April is the only record. De Worms (1964) likewise found one only during a week's collecting in April 1964. The small copper is described as locally common on Madeira and some specimens are very dark in coloration (Baker 1891) which suggests a distinct subspecies. However, our specimen is like a typical European small copper.

Lampides boeticus (long-tailed blue). In ones and twos at many sites but nowhere common. A female was seen egg-laying on broom near Faial on 9 April.

Vanessa atalanta (red admiral). Positively identified once only: Botanical Gardens, Funchal, 12 April, but several times may have been confused with the commoner *V. indica*.

Vanessa indica vulcania (Indian red admiral). Two or three adults in the Botanical Gardens at Funchal and eight small larvae feeding on nettles, *Urtica* sp. (possibly *dioica*) growing in the shade of a tree. Three more adults were seen near Tabua where a few larvae were found on the same species of nettle growing in the shade of a banana plantation. Another larva was found on this same species of nettle near the north end of the runway of the International Airport. An adult was collected near Queimadas on 11 April. Larvae brought back to England were fed on stinging nettle and four adult butterflies were eventually reared. In March 1985, D. A. S. Smith saw six females laying eggs on *Urtica* sp. (presumed to be *dioica*) at Puerto de la Cruz and Agua Mansa, Tenerife. He also found larvae at both sites. These nettles were also growing in the shade. The food-plant of *Vanessa indica vulcania* was apparently hitherto unknown. (Higgins and Riley 1980), possibly because the females lay on nettles in the shade, unlike *V. atalanta* which prefers nettles growing in the open.

Cynthia cardui (painted lady). Abundant on Ponta de São Lourenço but not seen elsewhere, except for a single individual just outside Funchal. Larvae in all stages of development were found on thistles and mallow, especially on disturbed waste land bordering the roadside east of Canical. From larvae brought back to England we reared 17 adults from mallow and 22 from thistle, most slightly darker than the five specimens collected as adults.

Pararge xiphia (Madeiran speckled wood). This endemic is found everywhere except in the more open places near the coast, the high plateau country and the São Lourenço peninsula. It is probably the commonest butterfly on Madeira. An egg was found on *Holcus*

lanatus and two eggs and three larvae on *Brachypodium sylvaticum* at Achada do Cedro Gordo; a larva was found on *Agrostis gigantea* and 14 larvae on *B. sylvaticum* at Boca da Encumeada; and another three larvae on *B. sylvaticum* near Queimadas. Hence our findings suggest that *B. sylvaticum* is the chief food-plant. All the larvae were in the third or fourth instar. *P. xiphia* larvae have conspicuously longer tails than those of *P. aegeria* and the two species are easy to tell apart.

Pararge aegeria aegeria (speckled wood). First recorded at Ribeiro Frio in 1976 (Higgins 1977), this butterfly is now widespread and common at low elevations, especially along the south coast, and shows signs of colonising many upland areas as well. It is especially associated with disturbed habitats: we found it among terraced cultivation, banana plantations and in gardens where *P. xiphia* was often absent, but in many places, particularly in the hills, the two species fly together. Two fourth instar larvae found on *Brachypodium sylvaticum*, one at Monte, the other at Achada do Cedro Gordo.

Danaus plexippus (monarch). Single specimens at various localities in the vicinity of Funchal, notably in the Botanical Gardens where at least three individuals were present on 12 April. Two larvae and many eggs were found on three plants of *Gomphocarpus fruticosus* growing on waste land west of Funchal. This milkweed is a native of sub-Saharan Africa where it is a common food-plant of *Danaus chrysippus*. A. J. Showler tells us that in January 1984 he found several larvae on *Asclepias curassavica* (a tropical American milkweed) in the Municipal Gardens, Funchal. These might be the first definite breeding records of the monarch on Madeira.

References

- Baker, G. T. 1891. Notes on the Lepidoptera collected in Madeira by the late T. Vernon Wollaston. *Trans. ent. Soc. Lond.* 1891: 197-221.
- De Worms, C. G. M. 1964. Madeira in the spring, April 1964. *Ent. Rec.* 76: 252-254.
- Gardner, A. E. and Classey, E. W. 1960. Report on the insects collected by the E. W. Classey and A. E. Gardner expedition to Madeira in December 1957. *Proc. Trans. S. Lond. ent. Nat. Hist. Soc.* 1959: 184-206.
- Higgins, L. G. 1977. The speckled wood (*Pararge aegeria* L.) in Madeira. *Ent. Rec.* 89: 22-23.
- Lace, L. A. and Jones, M. J. 1984. Habitat preferences and status of the Madeiran butterfly fauna. *Bol. Mus. Mun. Funchal* 36: 162-176.

- Swash, A. R. and Askew, R. R. 1982. A survey of Madeiran butterflies, 1981. *Bol. Mus. Mun. Funchal* 34: 60-66.
- Wolff, N. L. 1975. On the sudden mass occurrence in 1974 of *Pieris rapae* L. (Lepidoptera, Pieridae) in Madeira. *Bol. Mus. Mun. Funchal* 29: 26-32.
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A NOTE ON THE PROBABLE HABITAT OF CRYPTOPHAGUS FALCOZI ROUBAL (COL., CRYPTOPHAGIDAE) — In Britain, *C. falcozi* has been found in the wild only in Windsor Forest (Owen 1982 *Entomologist's mon. Mag.* 118:22). The first examples found there (21.i.1981) were in a rotten branch of beech lying on the ground below an old dead beech tree.

In spite of repeated searching, no more specimens could be found at the site but some months later, in a different part of Windsor Forest about 4km distant, I found some in the hollow stump of another beech tree which had been blown down some months previously. While the tree stood, its hollow base had communicated with the outside by a small hole at ground level. The stump was about 1.5m high and was composed of a shell of wood, soft and rotten on the inside with hard bark on the outside. The beetles were found by sieving rotten wood and debris from inside the stump. I do not know for how long the beetles continued to breed in the stump but they were still to be found there some 12 months later, that is about 18 months after the tree had been blown down and the interior of its hollow base exposed.

Recently (22.v.86), I found about a dozen examples of the beetle in debris from inside the hollow stump of another ancient beech tree which too had been blown over. It was about 1km from the second tree. There were a few old fruiting bodies of a *Ganoderma* sp. (probably *applanatum*) inside and outside the shell of the stump. While the tree stood, there had been a small hole linking the hollow inside to the outside at ground level.

The great similarity between the second and third sites, strongly suggests that the natural habitat of *C. falcozi*, at least at Windsor, is inside the hollow base of ancient beech trees. Until the tree blows down, this will often be (to coleopterists) a virtually inaccessible habitat which could explain the very few records for the species anywhere in its range. On this basis, the first examples taken must have comprised a temporary colony.

Examples of *Aeletes atomarius* (Aube) were present in both the hollow stumps. In Britain, this is a rare species (though not so rare as *C. falcozi*) and could possibly be an associated marker species. J. A. OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU.